Stating the obvious: *Of course* as a focus-sensitive marker of uncontroversiality

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1 Introduction

This project explores the semantic and pragmatic contributions of the English discourse particle *of course*, which has been underexplored in the theoretical linguistics literature (though see Holmes 1988 for a functionalist view).

(1)   A: Did Maude make her famous kumquat strudel for the potluck?
        B: **Of course** she did(n't).

(2)   A: Did Maude make her famous kumquat strudel for the potluck?
        B: **Of course** (not).

In this talk we argue several main points:

- *Of course* is a not-at-issue, focus sensitive discourse particle that marks a proposition as uncontroversial – more likely than its focus alternatives – **for the speaker**.

- The apparent uncontroversiality for the addressee associated with *of course* arises from general pragmatic principles involving assumptions of shared beliefs and reasoning.

- While *of course* demonstrates similarities to German modal particles like *doch* and *ja*, it cannot be fully collapsed into existing analyses of those particles.

Due to time limitations, we focus on uses like (1) in this talk, though our complete analysis includes an explanation of uses like (2), where *of course* does not appear with

an overt proposition.

Roadmap:

2 Empirical Ground

2.1 Compatible sentence types

Of course is only felicitous in declaratives: it is not compatible with imperatives (4), questions (5), or exclamatives (6).

(3) a. Fran cleaned her room(,) of course.
     b. Of course(,) Fran cleaned her room.

(4) a. *Of course clean your room!
     b. *Clean your room of course!

(5) a. *Did you of course clean your room?
     b. *Did you clean your room of course?

(6) a. *Of course what a clean room you have!
     b. *What a clean room you have of course!

More precisely, *of course* seems to only be compatible with assertive speech acts.

⋆ A reasonable corollary: *of course* requires a propositional argument!

2.2 Distribution

2.2.1 In responses to questions and assertions

Of course is naturally used in responses to the following discourse moves:

To polar questions:

(7) A: Did Maude make her famous strudel for the potluck?
     B: Of course she did(n't).

To assertions:

(8)   A: Maude made her famous strudel for the potluck.
       B: Of course she did(?n't).

To wh-questions:

(9)   A: What did Maude make for the potluck?
       B: Her famous strudel of course!

And to so-called *quiz questions*, in which the asker is not interpreted as genuinely seeking information but rather testing the knowledge of the askee:

(10)   Game show host: What is the capital of Estonia?
        Contestant: Tallinn of course.

In these uses, *of course* emphasizes the answer/response by communicating that the information is somehow **obvious** or **uncontroversial** (to be refined below!).

2.2.2   Positional variability

Of course is also positionally variable. It sometimes prefers to sit sentence finally, and sometimes prefers to sit sentence initially.[1] However, these positions are not always interchangeable:

Polar questions:

(11)   A: Did Maude make her famous strudel for the potluck?
        B: Of course she did.
        B': ?She did of course.

Declaratives:

(12)   A: Maude made her famous strudel for the potluck.
        B: Of course she did.
        B': #/??She did of course.

Wh-questions:

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[1]It can also sometimes sit sentence medially, but we focus here on its use in initial and final positions. When sentence-medial, it generally sits between larger constituents. Further exploration is needed to determine whether it is merged in this internal position or undergoes movement.

(13) A: What did Maude make for the potluck?
      B: #Of course her famous strudel!
      B': Her famous strudel of course!

We return to this asymmetry below in section 5.

2.3 (Not-)At-Issueness

We argue that *of course* is a not-at-issue discourse particle (Potts 2005b, Simons et al. 2010, Murray 2010, Rett 2018, a.m.o.)

Of course must modify a matrix clause and cannot be embedded under a non-quotative reading:

(14) A: Will Maude make her famous strudel for the potluck?
      B: #Elaine thinks that of course she will.

Of course is speaker-oriented, i.e. projects:

(15) A: Will Maude make her famous strudel for the potluck?
      B: Elaine thinks that she will of course.
          ⤳ Of course Elaine thinks that Maude will
          ⤳ #Of course Maude will, thinks Elaine

The content contributed by *of course* cannot easily be rejected directly:

(16) Q: Will Maude make her famous strudel for the potluck?
      A: Of course Maude will make her famous strudel for the potluck.
      B: No! She will make an apple pie.
      B': #No! It can't be obvious to you that she will make a strudel.[2]

2.4 Perspective

Of course p communicates that *p* is somehow obvious or uncontroversial. To whom does the information need to be obvious? The speaker? The addressee?

2.4.1 *Of course* must be obvious/uncontroversial for the speaker

It is infelicitous for a speaker to use *of course* to modify a proposition whose information is surprising or unexpected to them:

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[2]A wrinkle: *Of course* can be used to respond to a QUD, especially in its bare response use. In the bare response use it appears to be behaving more like a polarity particle. Please see our upcoming work for additional discussion.

(17)   *Maude has always brought desserts and nothing else to potlucks: strudels, pies, whatever dessert you can think of, but never anything else. After a recent potluck, Beatrice is talking with Amy:*

       A: Bummer I missed the last potluck, how was it?
       B: It was good. Maude brought a rack of lamb (#of course).

It is also infelicitous for a speaker to use *of course* to modify a proposition whose information they are unsure of:

(18)   *Amy and Beatrice are at a potluck. There are some cookies on the table and Amy is a strict vegan.*
       A: Are the cookies vegan?
       B: Of course they are! I made them with you in mind.
       B': ??/#Of course they are! John made them and he probably remembered that you're a vegan.

2.4.2 *Of course* need not be obvious/uncontroversial for the addressee

A natural hypothesis is that p must also be obvious to the addressee; in fact, Holmes (1988) defines the meaning of *of course* as providing "an overt signal that the speaker is assuming that the hearer accepts or is already familiar with the propositional content of her or his utterance" (pg. 53).

However, while intuitive, we can see that this can't be quite correct. For instance, we have seen that *of course* is felicitous in responses to information-seeking questions, for which the response is not in the common ground:

(19)   *Alphonse and Bartholomew are discussing politics. Alphonse doesn't follow the news.*
       A: Who won the election?
       B: Mary did of course.

In (19), Bartholomew suggests that Mary's victory was somehow expected, but their response is felicitous even though Alphonse is completely uninformed about politics.

And *of course* can even be used to contradict an addressee's preceding assertions in a discourse:

(20)   A: John will never come to the party.
       B: Of course he will! He never misses a chance for free hors d'oeuvres.

Here, B seems to suggest that A *should have* known that John will come to the party, not that they *did* know.

There are two additional uses in which information regarding p is not presupposed to be available to the addressee: the *confidential* and *concessive* uses.

Confidential uses

Confidential uses are those in which the speaker signals shared attitudes or knowledge regarding p with the addressee even if the speaker is aware that no such shared knowledge exists.

Holmes (1988) calls this use the *confidential* use, as it can be used as a way of signaling camaraderie and in-group membership.

(21)   *Mary, teaching John to drive a manual:*
         You press the clutch to shift into first gear, and then *of course* you press the clutch again to brake to a stop.

Concessive uses

Another use of *of course* that does not require p to be known by the addressee is what Quirk et al. (1972) call the *concessive* use, in which the speaker signals she is about to proffer additional relevant information.

(22)   A: Who is trying out for the available orchestra seat?
         B: John is. Of course, so is Elaine.

We propose the following generalization about the concessive usage:

For a given QUD Q: p has been put on the table as a way of resolving Q. *Of course* r asserts a proposition r that contrasts with p and presents evidence against p resolving Q (either by signalling that another alternative is the correct answer or by signaling that p doesn't fully resolve Q).[3]

For (22), Q = *Who will make the orchestra?* and B's response communicates that Elaine is a challenge to John getting the open orchestra seat.

2.5   Interim Summary

Of course is a positionally variable, not-at-issue response particle that marks a proposition p as uncontroversial/obvious for the speaker, but not necessarily for the addressee.

3   Comparison to German modal particles

Compared to *of course*, the German discourse particles *doch* and *ja* have been much-better studied by theoretical linguists.

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[3]See also Toosarvandani (2014)

They share a core meaning with *of course* in that they mark information as 'obvious' or 'uncontroversial' (Kratzer & Matthewson 2009, Grosz 2010, Zimmermann 2011, Kaufmann & Kaufmann 2012, Kraus 2018, a.o).

3.1 How *of course* is different

3.1.1 *Doch*

Informally, most accounts of *doch* argue that it introduces a Stalnakerian presupposition that its modified proposition is uncontroversial, but this uncontroversial proposition is somehow contradictory to previous information.

Authors vary in how exactly they cash out the presuppositions of $doch(p)$:

- <u>Grosz (2010)</u>: p is an 'established fact' and has a salient focus alternative q which contradicts p

- <u>Kaufmann & Kaufmann (2012)</u>: it is in the CG that *normally* in a situation like the current context c any rational agent whose goal is to find out whether p does, but c is not normal in this way

- <u>Rojas-Esponda (2013)</u>: The current QUD was previously closed (either unanswered or shown invalid)

For our purposes, *doch* differs from *of course* in some notable ways. First, *doch* can appear in imperatives, unlike *of course*:

(23)   a.   *Ruf   ihn **doch** an!*
                call.IMP him DOCH VPREF
                '(Just) call him!'   (Kaufmann & Kaufmann 2012: 214)
    b.   *Call him of course!

Moreover, *doch* can be used in situations where reality contradicts the way the things normally are, but *of course* is felicitous only when the state of affairs is consistent with the speaker's normal expectations:

(24)   Context: I wake up on a Sunday at 6AM because the neighbors are drilling.
    a.   *Heute ist **doch** Sonntag!*
           today is   DOCH Sunday
           'But today is Sunday!'   (Grosz 2010: 4)
    b. #Today is Sunday of course!

While *doch* shares a core of 'uncontroversial' meaning with *of course*, it additionally conveys that the uncontroversial proposition is somehow contrary to expectations or established fact, unlike *of course*.

3.1.2 *Ja*

Kaufmann & Kaufmann (2012) and Grosz (2010) both explicitly analyze the uncontroversial component of *ja*'s meaning as being identical to that of *doch*.

- For Grosz, this is the end of the story: *ja* is strictly weaker than *doch*

- For K&K, *ja* additionally presupposes that the conversational context is indeed 'normal'

Viesel (2015) and Kraus (2018), following earlier work, also claim *ja* takes two propositional arguments – one which is uncontroversial and the other representing a discourse move explained by *p*.

At first brush, this makes *ja* appear to be kith and kin with *of course*: both mark a proposition as being obvious.

However, *ja* and *of course* differ in important empirical ways:

- While *ja* can be used to signal that a proposition which the speaker had no particular reason to expect is settled, it is odd to use *of course* in such situations.

- For example, in (25) *of course* conveys the sense that the addressee was expected to have green eyes for one reason or another, e.g., if the speaker knows the addressee's family all has green eyes.

(25)   The speaker sees the addressee for the first time in bright sunlight and realizes the addressee's eye color.
    a.   *Du hast **ja** grüne Augen!*
        you have JA green eyes
        'You have JA green eyes!'   (Grosz 2010: 7)
    b.   #Of course you have green eyes!/You have green eyes, of course!

Kraus (2018) also points out that *ja* may be used to introduce information that is new to the addressee in the event that it is manifest to all discourse participants.

However, *of course* is felicitous only if that information was something that the speaker had some independent reason to expect.

(26)   *The speaker notices that the addressee has spilled coffee on her shirt.*
    a.   *Du hast **ja** gekleckert.*
        you have JA spilled
        'You've spilled, you know.'   (Kraus 2018: 272)
    b.   #You've spilled, of course.

But if the speaker knows that the addressee is extremely clumsy, (26b) becomes felicitous.

What does *ja* have that *of course* doesn't? A requirement that p be obvious to the addressee as well as the speaker.

3.2 Summary

Of course shares an important core of 'uncontroversial' meaning with *doch* and *ja*, but differs in crucial ways:

- Unlike *doch p*, *of course p* does not convey that p is unexpected – and in fact, rather the opposite.

- Unlike *ja p*, *of course p* does not necessitate that the speaker believes that the addressee already believes or can immediately verify p.

Nevertheless, the significant overlap in meaning between *of course* and *ja* suggests that existing analyses of *ja* are a useful starting point.

4 Analysis

We propose that *of course* marks a proposition p as **uncontroversial** compared to p's **focus alternatives**.

(27)   Definition 1: When a speaker s utters *of course p*, she 1) asserts p and 2) presupposes that p is **uncontroversial** for s in the conversational context.

4.1 Uncontroversiality

What does it means for a proposition to be uncontroversial? For Kaufmann & Kaufmann (2012), a proposition p is 'uncontroversial' if any rational agent under normal circumstances who wishes to find out whether p does so from readily available information.

However, this definition of uncontroversiality does not quite capture the uses of *of course p* where p is not taken to be known to the addressee, since it imposes a requirement on the 'obviousness' of p to all conversational participants.

Our solution: relativize uncontroversiality to individual discourse participants.

We define uncontroversiality using a probabilistic framework (Yalcin 2010, Lassiter 2011). We model beliefs as functions from world, time, speaker triples to epistemic probability spaces $\langle E_{stw}, Pr_{stw} \rangle$, such that:

1. E_{stw} is the set of propositions epistemically accessible from a speaker s, at time t, in a world w. $\bigcap E_{stw}$ provides the set of epistemically accessible worlds.

2. Pr_{stw} is a function from a finite set of possible worlds W to [0,1], where (i) $Pr_{stw}(\bigcap E_{stw}) = 1$, and (ii) $Pr_{stw}(p \cup q) = Pr_{stw}(p) + Pr_{stw}(q)$ if p, q are disjoint. A function g_{stw} maps from speaker, world, time triples to probability spaces.

3. Speakers assign probability distributions over an epistemic base E_{stw} via Bayesian conditioning, updating their distribution whenever they receive new relevant information.

We can define **uncontroversiality** as follows:

(28)   Definition 2 (preliminary): A proposition p is uncontroversial for a speaker s at time t given an epistemic probability space $\langle E_{stw}, Pr_{stw} \rangle$ and a contextually given probability threshold θ on (0,1], for all $q \in [\![p]\!]^f$, $Pr(p) - Pr(q) > \theta$.

This definition is promising, but not quite yet what we need. This will not rule out examples like (25); instead, we need to capture the intuition that the probability of p when uttering *of course p* does not include direct evidence the speaker might have for p.[4] We therefore modify our definition of uncontroversiality as follows:

(29)   Definition 2 (final):
V: set of all propositions v in E_{stw} such that v was gained via direct evidence of p.
Uncontroversiality: A proposition p is uncontroversial for a speaker s at time t given an epistemic probability space $\langle E_{stw}, Pr_{stw} \rangle$ and a contextually given probability threshold θ on (0,1], for all $q \in [\![p]\!]^f$, for E_{stw} - V, $Pr(p) - Pr(q) > \theta$.

Why probability?
We define uncontroversiality probabilistically for two main reasons. For one, *of course p* can be felicitously uttered even if p is less likely than $\neg p$, as long as p is nonetheless much more likely than any one alternative.

(30)   *A lottery is taking place in which a integer from 1-100 is selected. 1 is 49% likely to be selected, and 2-100 are all equally likely as one another.*
A: Which number will they pick?
B: They'll pick 1, of course.

But it is not sufficient to say that p simply needs to be more likely than its focus alternatives to license *of course*:

(31)   *Same lottery, except 1 is 2% likely to be selected, and 2-100 are still equally likely as one another.*

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[4]By direct evidence we mean any first or second hand knowledge of the truth of p based on visual or reported knowledge of p.

A: Which number will they choose?
B: #They'll pick 1, of course.

In (31), even though 1 is a more likely choice than any alternatives, its likelihood doesn't exceed that of the alternatives by all that much: $Pr(p)$ must exceed $Pr(q)$ for all $q \in [\![p]\!]^f$ by a contextually-determined margin; a proposition with a low probability that is nonetheless more probable than its alternatives is not necessarily felicitously marked with *of course*.

⋆ We believe the probabilistic formalization given here for uncontroversiality is suitable for our needs, but nothing crucial in our analysis rests on this particular choice of framework.

4.2   Deriving Addressee Uncontroversiality

In §2, we pointed out that *of course p* often suggests that p is or should also be obvious/uncontroversial to the addressee as well as to the speaker.

However, we also showed that addressee uncontroversiality is defeasible, and therefore cannot be included in the semantics of *of course*.

Instead, we propose that the addressee effects are derived pragmatically by a defeasible inference generated by *of course*:

(32)   **Shared Background Assumption (SBA)**:
For a proposition p, its focus alternatives $q \in [\![p]\!]^f$, a world w, and a time t, call R a set of propositions such that for all $r \in R$, r is relevant to determining the probability of p relative to all q in w at t.
1.   *Of course p* presupposes that p is uncontroversial for the speaker in w at t.
2.   In a given w and t, the speaker may believe that they and the addressee(s) share equal access to R based on beliefs or knowledge of shared education, world-knowledge, or in-group social knowledge.
3.   If the speaker and addressee(s) have equal access to R, a pragmatic inference is generated that p is or should be, based on this shared information, uncontroversial for the addressee as well as for the speaker.

When does the Shared Background Assumption hold?

⋆ The assumption that the speaker and addressee have access to the same information regarding the probability of p is not a hard requirement on the context.

→ There is not necessarily conversational infelicity when *of course* is used to modify a proposition that is not uncontroversial for the addressee.

⋆ The SBA is context sensitive, depending on assumptions of the shared background between different speakers.

In (33), whether speakers judge *of course* in Bartholomew's response as a) implying that Alphonse should have known the answer, or b) emphasizing that the Patriots will win, appears to correlate with their beliefs about how much people generally know about football.

(33)   *Alphonse and Bartholomew are discussing an upcoming football game between the Patriots and the Detroit Lions.*
         A: Who will win the game?
         B: The Patriots will of course.

The context sensitivity of the Shared Background Assumption also explains the manipulative use of *of course* pointed out by Holmes (1988), such as when the speaker expresses a controversial opinion using *of course*:

(34)   [Prime Minister Robert Muldoon in a TV interview]
         yes well Marilyn's got a thing about middle-aged males *of course* (ibid., 59)

(35)   Asbestos is harmless in walls *of course*.

The speaker does not truly believe that their addressees share the same background information for these utterances, but is suggesting that their addressee(s) accommodate their controversial choice of R.

Comparison to *obviously*

The unilateral uncontroversiality requirement of *of course* can also explain differences between *of course* and similar particles like *obviously*.

For example, using *obviously* in a response to a sincere information-seeking question is generally considered rude, whereas *of course* in the same context need not be.

(36)   A: What time is it?
         B: 7 o'clock, obviously.
         B': 7 o'clock, of course.

Assuming B' takes A's inquiry to be genuinely seeking information, she knows that the SBA cannot hold, and *of course* does not generate the inference that A knew the time.

If *obviously p* requires uncontroversiality (or something similar) to hold of the addressee as well as the speaker, then the 'rudeness' is expected, because B's assumption that the current time is uncontroversial is at odds with A's question.

4.3 Focus sensitivity

Our definition of *of course p* proposes that p is uncontroversial compared to p's **focus alternatives**. Why think that *of course* associates with focus?

Question-Answer Focus Congruence

In responses to constituent questions, focus falls on the constituent that corresponds to the wh-word in the interrogative form (Halliday 1967, Rooth 1992, Roberts 1996).

(37)   Q: Who plays the bassoon?
        A: ELAINE$_F$ plays the bassoon.
        A': #Elaine plays the BASSOON$_F$.

Focus Alternatives with *Of course*

When *of course* is used in a response to a question or assertion, the relevant comparison set – the set of propositions that p is more probable than – is determined by which constituent receives focus.[5]

For example, focus (realized by focal pitch accent) on different constituents in (38) changes the focus alternatives (in the sense of (Rooth 1992)) to which p is compared:

(38)   a.   Of course [ELAINE]$_F$ plays the bassoon. (As opposed to John, Mary,...)
        b.   Of course Elaine [PLAYS]$_F$ the bassoon. (As opposed to waxes, eats,...)
        c.   Of course Elaine plays the [BASSOON]$_F$. (As opposed to the theremin, the zither,...)

(39)   *Three of our friends are trying out for an orchestra. I know they all play different instruments, but I don't know who plays what. I can ask:*
        A: Who plays the bassoon?
        B: ELAINE$_F$ plays the bassoon of course.

Here, we predict that *of course* is marking the proposition $\{w$: Elaine plays the bassoon in $w\}$ as uncontroversial compared to the propositions created by the focus alternatives of (39):

(40) $[\![[\text{Elaine}]_F \text{ play the bassoon}]\!]^f = \{\text{x } \textbf{plays b} \mid \text{x} \in \text{E}\}.$[6]

The interpretation of (39) is that it is obvious or uncontroversial that Elaine plays the bassoon, as opposed to any other individual in some contextually determined set.

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[5]We tentatively propose that *of course* falls under Beaver & Clark's (2008) *free association* with focus, though additional work remains to be done on this question.

[6]Contextual domain restriction assumed.

(41)   *Three of our friends are trying out for an orchestra. I know they all play different instruments, but I don't know who plays what. I can ask:*
       A: Which instrument does Elaine play?
       B: Elaine plays the [BASSOON]$_F$ of course.

Here, we predict that *of course* is marking the proposition $\{w$: Elaine plays the bassoon in $w\}$ as uncontroversial compared to the propositions created by the focus alternatives of (41):

(42) $[\![$Elaine play the [bassoon]$_F]\!]^f = \{$**e plays** x $\mid$ x $\in$ E$\}$.

The interpretation of (41) is that it is obvious or uncontroversial that Elaine plays the bassoon, as opposed to any other instrument in some contextually determined set.

5   Further Questions

Whence positional variability?

One question we haven't answered: why are there the position effects that we showed earlier?

Recall that we claimed *of course* is odd sentence-initially in response to a wh-question:

(43)   A: What did Maude make for the potluck?
       B: #Of course her famous strudel!
       B': Her famous strudel of course!

But, final position in wh-questions improves with "list intonation":

(44)   A: Who's going to come to the party?
       B: Of course ELAINE will, but Matt won't.

We believe this difference is not syntactic or semantic in nature, but is due to **prosodic** and **information structure** constraints.

Recall that *of course* in responses to declaratives and polar questions generally prefers to be in initial position.

One possibility:

(45)   Q: Who's going to come to the party?
           Will Elaine come?
           Will Matt come?
       A: Of course Elaine will come.
           Of course Matt will come.

Comma Intonation and Medial Uses

One additional question that we don't have time to address in this talk is the ability of *of course* to appear with so-called 'comma intonation' prosody (Potts 2005a):

(46)   a.   Of course(,) Elaine plays the bassoon.
       b.   Elaine plays the bassoon(,) of course.
       c.   Elaine, of course, plays the bassoon.

Intonational Differences Across Uses

(47)   Concessive uses:
       Who is trying out for the available orchestra seat?
       B: John is. Of course, so is Elaine.

(48)   A: Is Elaine trying out for the orchestra?
       B: Of course she is!

How different intonational contours map onto different uses of *of course* is something we are still investigating.

Bare Response Uses

In addition to appearing with an overt proposition, *of course* may appear either on its own or with *not* in discourse:

(49)   A: Are you coming to the sock hop?
       B: Of course. (= Of course I am coming.)
       B': Of course not. (= Of course I am not coming.)

If *of course* takes a propositional argument p, it raises the question: what is p in cases where there is no overt proposition?

We believe that the p with which *of course* associates when it is a bare response particle is derived via ellipsis (Kramer & Rawlins 2009), as opposed to *of course* picking up a proposition anaphorically (Krifka 2013).

Please see our upcoming work on this...

6   Conclusion

We've argued several main points:

⋆ *Of course* signals a proposition is 'uncontroversial' – significantly more likely than its focus alternatives – for the speaker.

⋆ The apparent uncontroversiality for the addressee associated with *of course* arises from a general pragmatic principle involving assumptions of shared beliefs and reasoning

⋆ A novel contribution of our account is that it relies on a notion of uncontroversiality that is *relativized to individuals*, rather than being an objective property of propositions.

→ A one-size-fits-all approach to uncontroversiality is too broad to capture the nuances exhibited by different particles.

Future directions

Far from being exotic, *of course* appears to be one part of a much larger cross-linguistic class of uncontroversiality markers:

⋆ E.g. *doch* and *ja*, St'át'imcets *qa7* (Kratzer & Matthewson 2009), Finnish/Estonian *kyllä/küll* (Keevallik & Hakulinen 2018), and Tagalog *naman* (AnderBois 2016)

> → How comprehensively the analysis outlined here can extend to the cross-linguistic data remains to be investigated.

⋆ Lexical items may vary in which discourse participants they associate with uncontroversiality.

⋆ Further work is necessary to determine the extent to which uncontroversiality interacts with other mechanisms for evidential-marking, such as sentential prosodic contours (Kraus 2018, Goodhue & Wagner 2018).

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